

DOCUMENT RESUME

ED 334 890

HE 024 718

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TITLE Payback Periods for Student Financial Aid in Postsecondary Education in Arkansas.
INSTITUTION United Faculty of Florida.
SPONS AGENCY Arkansas Association of Private Schools.
PUB DATE 10 Dec 86
NOTE 40p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS College Outcomes Assessment; *Cost Effectiveness; Income; Loan Repayment; Paying for College; Postsecondary Education; State Federal Aid; *Student Financial Aid; Taxes; Tax Rates; *Tuition Grants
IDENTIFIERS *Arkansas

ABSTRACT

This report presents study results concerning student financial aid and the payback periods for state grants, federal grants, and federal loans to the State of Arkansas and to the Federal Government. The study reveals that student aid for postsecondary education in Arkansas has significant, positive effects on the state's tax revenue and on the Federal Government's individual income tax revenue. The results of the study also indicated a considerable difference in personal incomes between individuals who complete only high school and individuals with different levels of postsecondary education. It is noted that when long-term ramifications of a higher education are considered, the payback periods for selected student financial aid instruments are notably short. Available evidence indicates that student financial aid in Arkansas assists in the achievement of a higher education and thus increases taxable income, which in turn more than compensates for the amounts expended for student financial aid. It is further noted that the higher taxable revenue, as well as the higher quality of life achieved as a result of the advanced education, continues long after the loan is repaid. Contains an 18-item bibliography and 45 references. (GLR)

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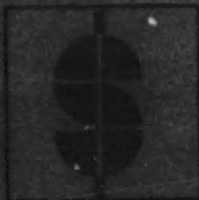
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**PAYBACK PERIODS FOR STUDENT FINANCIAL AID
IN POSTSECONDARY EDUCATION IN ARKANSAS**

By

Britt Loyd

**Division of Business Studies
Center for Research and Public Policy
University of Arkansas at Little Rock**

For

Arkansas Association of Private Schools

Publication 86-12

December 10, 1986

PREFACE

The following research study was prepared for the Arkansas Association of Private Schools by the Division of Business Studies, Research and Public Service, University of Arkansas at Little Rock. The results and findings may be used by the client in any manner desired and the results kept private or made public at the client's discretion with the exception noted below.

If the client presents results other than those reported or presents interpretations not contained in the report as the work of the Division of Business Studies, or if the client intimates or suggests the results constitute an endorsement by the Division of Business Studies or the University of Arkansas at Little Rock, the Division of Business Studies shall have the right to release the complete results as correctly reported and to issue a disclaimer that the Division of Business Studies and the University of Arkansas at Little Rock do not endorse any company, organization, product, or person but merely report the results of the data analysis.

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EXECUTIVE SUMMARY

This research study, "Payback Periods For Student Financial Aid In Postsecondary Education In Arkansas," was conducted by the Division of Business Studies, Research and Public Service, University of Arkansas at Little Rock for the Arkansas Association of Private Schools (AAPS). The purpose of the study was to determine the payback periods for state grants, federal grants, and federal loans to the State of Arkansas and to the Federal Government, as appropriate.

The payback periods were calculated by means of increased tax revenue and increased individual income tax (net of refunds) revenue due to increased individual incomes. The increase in individual incomes was taken to be the result of individuals' attending state universities and colleges, private and independent colleges, and postsecondary proprietary schools, with the assumption that, generally, income levels are a function of education levels. Thus, higher individual incomes mean higher tax revenue for the State of Arkansas and higher individual income tax revenue for the Federal Government.

The terms of the research study were based on a financial management technique termed the "payback period." The payback period was defined as the length of time, measured in days, weeks, months, or years, required to recover the total amount of an original investment by means of net cash flows. Since the original investment was designated as the total amount spent for student financial aid during students' education enrollment, the payback period measured the length of time from the point in which students started their particular education program and received student financial aid to the point in which the total amount (original investment) expended for student financial aid was recovered by the state or Federal Government by means of increased tax revenue. Due to the intricate nature of the research study, certain considerations and assumptions were necessary. However, these considerations and assumptions were not without limitations; for clarification, therefore, the limitations of the study have been presented in a summarized form.

Concerning state grants, the payback period for state universities and colleges was 4.99 years, 5.03 years for private and independent colleges, and 3.44 years for proprietary schools. For all three types of institutions, state grants would increase total personal incomes by \$104,765,901 and would increase total tax revenue to the State of Arkansas by \$8,147,651 the first year after the students receiving grants had graduated with their appropriate levels of education (Year 1).

Federal grants specifically noted in the research study were the Pell Grant and the Supplemental Education Opportunity Grant (SEOG). For the Pell Grant, the payback period for state universities and colleges was 8.48 years, 9.81 years for private and independent colleges, and 9.67 years for proprietary schools. In Year 1, based on contributions by all three types of institutions, Pell Grants would increase total personal incomes by \$208,521,825 and would supply an additional \$17,424,098 in increased total individual income tax revenue to the Federal Government.

Regarding the Supplemental Education Opportunity Grant (SEOG), the payback period for state universities and colleges was 6.81 years, 6.81 years for private and independent colleges, and 3.91 years for proprietary schools. SEOG's would cumulatively increase total personal incomes by \$34,103,483 and would increase total individual income tax revenue to the Federal Government by \$2,849,647 in Year 1.

Federal loans cited in the research study were the National Direct Student Loan (NDSL) and the Guaranteed Student Loan (GSL). Unlike grants, loans must be paid back. The payback periods for the National Direct Student Loan (NDSL) were 7.61 years for state universities and colleges and 8.19 years and 4.30 years for private and independent colleges and proprietary schools, respectively. For all three types of institutions, NDSL's would increase total personal incomes by \$66,817,581 and would provide an additional \$5,583,312 in increased total individual income tax revenue to the Federal Government in Year 1.

For the Guaranteed Student Loan (GSL), the national net default rate was 7.7 percent while Arkansas had only a 3.0 percent net default rate during the fiscal 1983-84 school year. Of this small percentage of GSL's that was defaulted on, the payback period was 12.48 years for state universities and colleges and 13.74 years for private and independent colleges. Data were not available for proprietary schools. In Year 1, GSL's would collectively increase total personal incomes by \$122,462,757 and would furnish an additional \$10,233,099 in increased total individual income tax revenue to the Federal Government.

In conclusion, student financial aid for postsecondary education in Arkansas has significant, positive effects on the state's tax revenue and on the Federal Government's individual income tax revenue, as indicated by the results of the research study. The results also indicated a considerable difference in personal incomes between individuals who complete only high school and individuals with different levels of postsecondary education. In addition, when the long-term ramifications of a higher education are considered, the payback periods for selected student financial aid instruments are notably short.

Available evidence indicates that student financial aid in Arkansas assists in the achievement of a higher education. Specifically, the higher education made possible for Arkansans by student financial aid has clear and obvious benefits. For the State of Arkansas and the Federal Government, the increased tax revenue generated by the higher education of individual citizens more than compensates for the amounts expended for student financial aid; that is, the end of the payback period signals the point at which the amount spent (original investment) has been recovered, but the increased tax revenue continues throughout these citizens' working lives. For the individuals whose increased earnings, made possible by student financial aid, have improved both the tax revenue outlook and their own quality of life, the benefits may well extend over a lifetime.

INTRODUCTION

The following research study was conducted by the Division of Business Studies, Research and Public Service, University of Arkansas at Little Rock. The study was conducted for the Arkansas Association of Private Schools (AAPS).

Purpose

The purpose of the study was to determine the payback periods for state grants, federal grants, and federal loans to the State of Arkansas and to the Federal Government, as appropriate. The payback periods for these grants and loans were to be calculated by means of increased tax revenue and increased individual income tax (net of refunds) revenue due to increased individual incomes. The increases in individual incomes were taken to be the result of individuals' attending state universities and colleges, private and independent colleges, and postsecondary proprietary schools, the assumption being that, generally, income levels are a function of education levels. The appropriate multipliers were also to be properly applied.

Methodology

The methodology of the study used exploratory research involving the analysis of selected government documents, interviews with knowledgeable persons, information extracted from relevant databases, and research previously conducted by the Division of Business Studies. Specifically, the study was concerned with state universities and colleges offering four-year programs, private and independent colleges offering four-year programs, and postsecondary proprietary schools offering programs of two years or less, one year or less, and less than one year; the study was based on returns from Arkansas schools for the fiscal 1983-84 school year.

All institutions observed in the study were those which utilized state grants, federal grants, and federal loans. Two-year institutions were not considered in the classifications for state universities and colleges and private and independent colleges. Postsecondary proprietary schools examined in the study were those which were accredited by the Association of Independent Colleges and Schools (AICS), the National Association of Trade and Technical Schools (NATTS), and the National Accrediting Commission of Cosmetology Arts and Sciences (NACCAS). Information on Guaranteed Student Loans (GSL) was not available for proprietary schools.

Assumptions

The study was concerned with the fiscal 1983-84 school year only and did not attempt to consider the time value of money, inflation, or any other variables within or after that time period. The income multiplier used in the study was 1.67 for the State of Arkansas.¹ Year 1 was defined as the first year after the students had graduated with their appropriate levels of education, and Year 5 as the fifth year after the students had graduated. The cumulative tax revenue in Year 5 was calculated by simply adding each year's increased revenue. The assumptions concerning Year 1 through Year 5 were that no increases or decreases in income would occur and that the individuals observed would earn an income each year during those years.

The study was based largely on the premise that individuals with additional education, that is, an education level beyond that of high school, have a tendency to earn higher incomes than individuals who complete high school only.² In conjunction with this premise, tax revenue from individual incomes is assumed to be significantly correlated with individual incomes. Thus, higher individual incomes mean higher tax revenue for the State of Arkansas and higher individual income tax revenue for the Federal Government.

According to the Regional Economic Information System from the U.S. Bureau of Economic Analysis, Arkansas had \$23,033,272,000 in total personal income in 1984.³ For that same year, Arkansas had \$1,791,226,000 in total general and special state taxes (tax revenue).⁴ Based on these two figures, individuals in Arkansas paid \$77.77 per \$1,000 of personal income in tax revenue to the State of Arkansas.⁵ Also reported by the Regional Economic Information System was that Arkansans paid \$1,924,772,000 in individual income taxes (net of refunds) to the Federal Government in 1984.⁶ Based on this figure and Arkansas' total personal income figure of \$23,033,272,000, Arkansans paid \$83.56 per \$1,000 of personal income in individual income taxes (net of refunds) to the Federal Government in 1984.⁷

The increase in personal incomes due to additional education provided by state universities and colleges, private and independent colleges, and proprietary schools was calculated for this research study by the Division of Business Studies based on data from the U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population for Arkansas. The average income for Arkansans over twenty-five years of age with only a high school diploma was \$10,474.⁸ However, the average income for Arkansans over twenty-five years of age with only one to three years of college was \$12,797.⁹ Furthermore, the average income for Arkansans over twenty-five years of age with only four years of college was \$16,800.¹⁰ Thus, the additional amount of personal income for an individual with only one to three years of college was \$2,323, and a four-year college education added \$6,326 to average personal income.

The findings of the study are based on a financial management technique termed the "payback period." The payback period is here defined as the length of time, measured in days, weeks, months, or years, required to recover the amount of an original investment by means of net cash flows. The original investment, in this particular study, is designated as the collective or total amount spent for student financial aid during students' education enrollment. For students attending a four-year institution, the original investment would consist of four expenditures (one expenditure per year for four years). For two-year institutions, the original investment would consist of two expenditures (one expenditure per year for two years). Therefore, the payback period measures the length of time from the point in which students begin their particular education program and receive student financial aid to the point in which the total amount (original investment) expended for student financial aid is recovered by the state or Federal Government by means of increased tax revenue. The study used this "regular" payback period rather than the discounted payback period method, which considers the recovery period of an original investment by means of discounted net cash flows.¹¹

In order to calculate the payback periods for each of the institutions observed, it was assumed that the same total dollar amount of grants or loans was provided each year to the same number of students throughout the length of the students' educational enrollment. For example, the assumption was that for students attending a four-year institution, the same number of students would receive the same total dollar amount of grants or loans during their freshman, sophomore, junior, and senior years.

For the payback period calculations for loans, it was assumed, also, that loans might be defaulted upon. Unlike grants, loans are paid back according to a specific time schedule or within a certain time period. However, a very small percentage of loans is defaulted upon and will ultimately be paid for by the Federal Government. Therefore, calculation of the payback periods for NDSL's and GSL's was based on an average loan amount to a single student who then defaulted, whereas grant payback periods were calculated on total numbers of students and total grant amounts.

Finally, for the purpose of payback period calculations, it was assumed that a student received only one type of student financial aid. For example, it was assumed, a student with a Pell Grant would not have a Guaranteed Student Loan as well. Specifically, in order to calculate the payback periods for a particular type of grant or loan, the study did not consider the possibility that a student might draw on a combination of student financial aid instruments. Thus, the increased tax revenue from students' increased income earnings was applied toward the payback of one grant or loan, not the payback of some combination of grants or loans.

Limitations

Due to the complexity of the subject matter, the assumption just noted and certain other considerations were necessary to facilitate the research study. However, these considerations and assumptions are not without limitations. For clarification, these limitations are summarized as follows:

- (1) In regard to income or tax revenue calculations and projections, the study did not consider the time value of money, inflation, or any other variables within or after the fiscal 1983-84 school year.
- (2) The study assumed that for Years 1 through 5, no increases or decreases in income would occur and that individuals would earn an income each year during those years. Realistically, however, all individuals will not earn an income each year during those years and, undoubtedly, all individuals will not earn the same amount of income each year.
- (3) Concerning the tax revenue figures, the study assumed that all individuals would become or remain permanent residents of the State of Arkansas for at least five years after they graduated. Although many individuals do remain in the State of Arkansas after graduating, some individuals move elsewhere during this period.
- (4) For personal income level calculations concerning individuals who attended proprietary schools, the category of only one to three years of college was used instead of the category of only two years of college since data for the latter category were not available. However, a significant difference between these two categories in terms of personal income levels is unlikely.
- (5) In regard to the calculations of the payback periods, a financial management technique termed the "payback period" was used to expedite the study. However, the payback period technique has three major limitations: (a) it can lead to wrong decisions since it ignores cash flows beyond the payback period itself, (b) it does not take the time value of money into consideration, and (c) it measures time, that is, the length of time it takes to pay back the investment outlay (original investment). However, the objective of effectiveness is to maximize the benefits of efficiently allocated funds, not to minimize time. The best manner in which to use the payback period is in combination with discounted cash flow procedures.
- (6) In the calculation of the payback periods, it was assumed that the same total dollar amount of grants and loans would be provided each year to the same number of students throughout the length of the students' education enrollment. In reality, although some students may receive identical grants or loans each year, generally different amounts of grants or loans are provided to various students during a given period of time.
- (7) Calculation of the payback periods for loans recognized the situation of a defaulted loan which could not be collected on by the financial institution or agency or the Federal Government. However, default rates in Arkansas are reasonably low and since the Federal Government is the ultimate insurer, it may choose to resolve the amount an individual owes on the defaulted loan by a number of effective means such as income tax considerations.

- (8) The study assumed, for purposes of payback period calculations, that a student would receive only one type of student financial aid for each year enrolled. However, a student may in fact draw on a configuration of various student financial aid instruments throughout his or her educational enrollment. Thus, the payback period calculations for a particular type of grant or loan were based on using increased tax revenue to payback one grant or loan, not some combination of grants or loans.

STATE GRANTS

Tax Revenue From Increased Individual Incomes

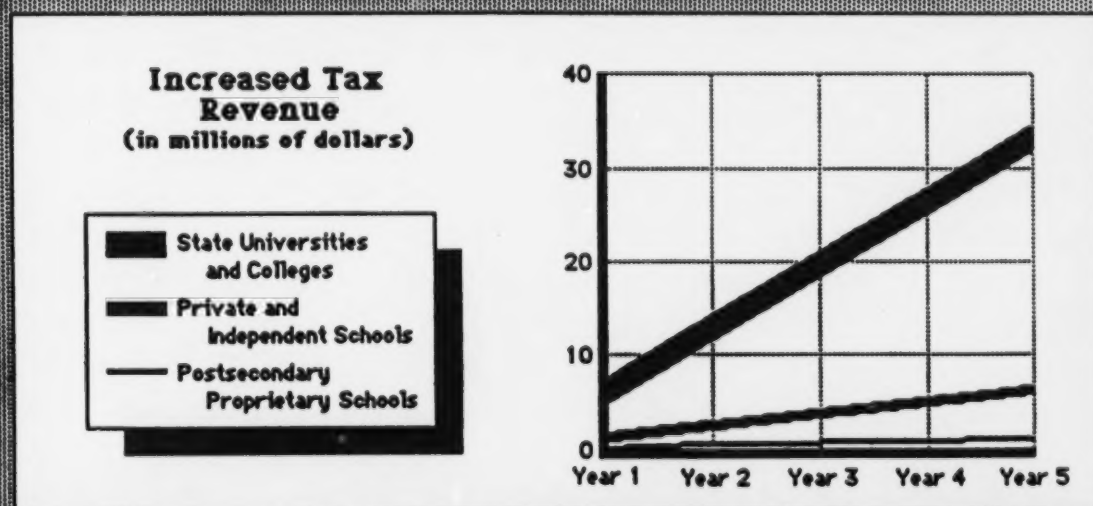
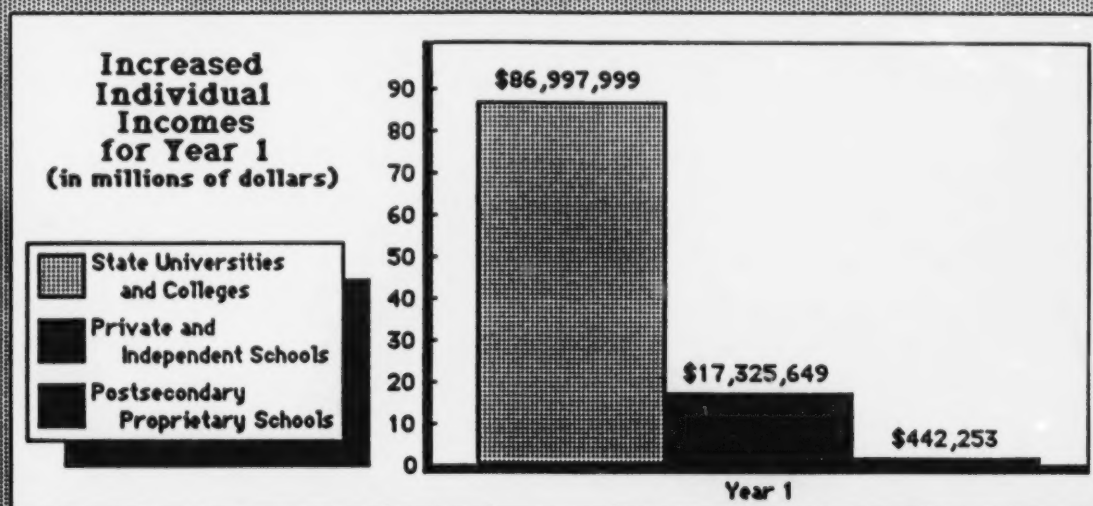
Information concerning students who received state grants and attended state universities and colleges, private and independent colleges, and proprietary schools in Arkansas during the fiscal 1983-84 school year is shown in Figure 1. During that year, 8,235 students attending four-year state universities and colleges received state grants through the Arkansas State Scholarship Program.¹² The total dollar amount of these grants was \$1,667,411 while the average dollar amount for each grant was \$202.¹³ Collectively, these 8,235 students would earn an additional \$52,094,610 ($\$6,326 \times 8,235$) in personal income in Year 1. However, this amount is increased to \$86,997,999 ($\$52,094,610 \times 1.67$) after the appropriate 1.67 multiplier is applied. In terms of tax revenue, the State of Arkansas would receive an additional \$6,765,834 ($\$86,997,999 \div \$1,000 \times \$77.77$) in Year 1 due to the \$77.77 in tax revenue generated for every \$1,000 of personal income earned. Since the cumulative tax revenue is an additive progression, the increased tax revenue in Year 5 would be \$33,829,170.

In four-year private and independent colleges, 1,640 students received state grants through the Arkansas State Scholarship Program.¹⁴ The total dollar amount of these grants was \$346,582 while the average dollar amount for each grant was \$211.¹⁵ In aggregate, these 1,640 students would earn an additional \$10,374,640 ($\$6,326 \times 1,640$) in personal income in Year 1. After the 1.67 multiplier is applied, however, this amount is increased to \$17,325,649 ($\$10,374,640 \times 1.67$). As a result, the State of Arkansas would receive an additional \$1,347,443 ($\$17,325,649 \div \$1,000 \times \$77.77$) in tax revenue in Year 1. The cumulative additional tax revenue from these individuals' continued income earnings would be \$6,737,215 in Year 5.

In proprietary schools, 114 students received state grants through the Arkansas State Scholarship Program.¹⁶ The total dollar amount of these grants was \$24,743 while the average dollar amount for each grant was \$217.¹⁷ Cumulatively, these 114 students would earn an additional \$264,822 ($\$2,323 \times 114$) in personal income in Year 1, although this amount is increased to \$442,253 ($\$264,822 \times 1.67$) after the 1.67 multiplier is applied. In terms of tax revenue, the State of Arkansas would receive an additional \$34,374 ($\$442,253 \div \$1,000 \times \$77.77$) in Year 1. For Year 5, the additional cumulative tax revenue from these individuals' continued income earnings would be \$171,870.

Figure 1 - STATE GRANTS

	Number of Recipients	Total Dollar Amount	Average Dollar Amount
State Universities and Colleges	8,235	\$1,667,411	\$202
Private and Independent Schools	1,640	\$ 346,582	\$211
Postsecondary Proprietary Schools	114	\$ 24,743	\$217



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Payback Periods

As has been shown, 8,235 students in state universities and colleges received state grants for a total dollar amount of \$1,667,411. In order to calculate the payback period, it was assumed that \$1,677,411 was spent each year on these 8,235 students for four years. That is, \$1,667,411 per year was spent on 8,235 students beginning their freshman year and continuing through their senior year. If these 8,235 students were to enter the labor force immediately after they graduated, which was previously defined as Year 1, they would generate an additional \$6,765,834 in tax revenue their first year for the State of Arkansas. Thus, the payback period for these 8,235 students would be 4.9857, or 4.99 years.

In four-year private and independent colleges, 1,640 students received state grants for a total dollar amount of \$346,582. Based on the previously mentioned assumption, \$346,582 per year was spent on 1,640 students their freshman year through their senior year. In Year 1, if these 1,640 students became employed, they would generate \$1,347,443 in tax revenue for the State of Arkansas. Based on these calculations, the payback period for these 1,640 students would be 5.0288, or 5.03 years.

In proprietary schools, 114 students received state grants for a total dollar amount of \$24,743. It was then assumed that \$24,743 was spent each year on these 114 students for a maximum of two years. That is, \$24,743 per year was spent on 114 students beginning their first year and continuing through their second year. In Year 1, if these 114 students were to enter the labor force, they would generate \$34,374 in tax revenue for the State of Arkansas. Thus, the payback period for these 114 students would be 3.4396, or 3.44 years. Table 1 provides summary information concerning state grants in relation to payback periods.

Table 1
STATE GRANTS

Type of Institution	No. of Years Grants Were Received	Education Level Obtained	Payback Period
State Universities and Colleges	4	4 yr. degree	4.99 years
Private and Independent Colleges	4	4 yr. degree	5.03 years
Postsecondary Proprietary Schools	2	2 yr. degree	3.44 years

FEDERAL GRANTS

Federal grants specifically noted in the study were the Pell Grant and the Supplemental Education Opportunity Grant (SEOG). Pell Grants are awards to help undergraduates pay for their education after high school. The Pell Grant program is the nation's largest Federal student aid program.¹⁸ For many students, these grants provide a "foundation" of financial aid, to which aid from other Federal and non-Federal sources may be added. Unlike loans, grants do not have to be paid back.¹⁹ An SEOG is also an award to help undergraduates only, and, like the Pell Grant, does not have to be paid back.²⁰

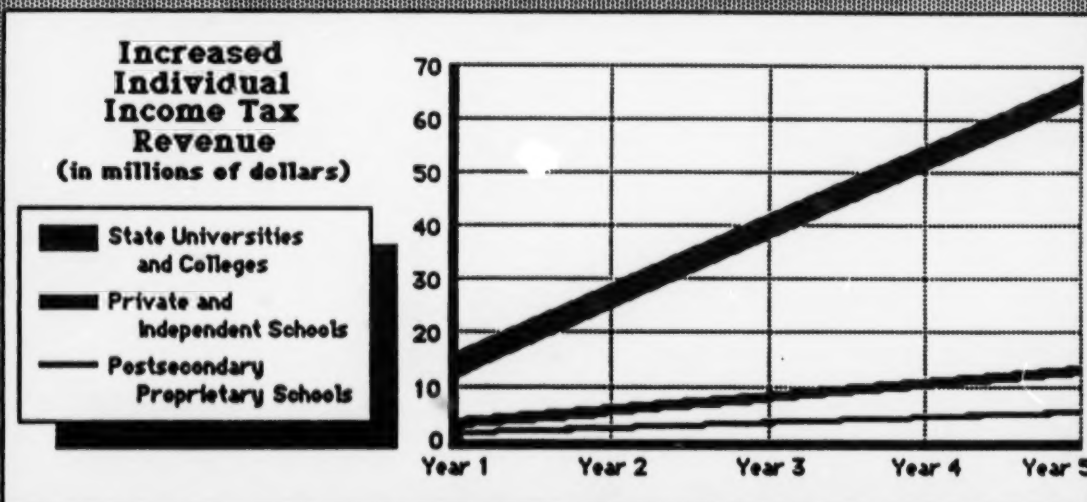
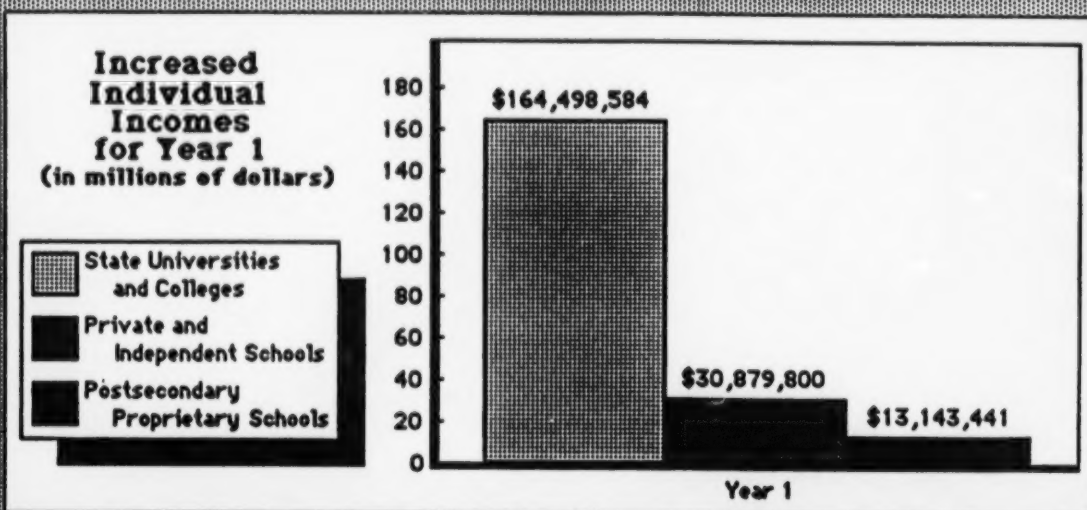
Pell Grant

Individual Income Tax Revenue From Increased Individual Incomes. Similar in format to Figure 1 concerning state grants, Figure 2 provides information for students who received Pell Grants and attended state universities and colleges, private and independent colleges, and proprietary schools in Arkansas during the fiscal 1983-84 school year. During that year, 15,571 students attending state universities and colleges received Pell Grants from the Federal Government.²¹ The total dollar amount of these grants was \$15,396,742 while the average dollar amount for each grant was \$989.²² Based on the additional amount of personal income each student would earn after completing a four-year education, these 15,571 students would cumulatively earn an additional \$98,502,146 ($\$6,326 \times 15,571$) in personal income in Year 1. However, this amount is increased to \$164,498,584 ($\$98,502,146 \times 1.67$) after the appropriate 1.67 multiplier is applied. In regard to individual income tax revenue, the Federal Government would receive an additional \$13,745,536 ($\$164,498,584 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1, based on the \$83.56 in individual income tax revenue the Federal Government received for every \$1,000 of personal income earned by Arkansans. As with state grants, the cumulative individual income tax revenue is an additive progression. Thus, the value in Year 5 would be \$68,727,680.

For four-year private and independent colleges, 2,923 students received Pell Grants from the Federal Government.²³ The total dollar amount of these grants was \$3,747,647 while the average dollar amount for each grant was \$1,282.²⁴ Based on the additional amount of personal income each student would earn after completing a four-year education, these 2,923 students would collectively earn an additional \$18,490,898 ($\$6,326 \times 2,923$) in personal income in Year 1. After the 1.67 multiplier is applied, however, this amount is increased to \$30,879,800 ($\$18,490,898 \times 1.67$). Concerning individual income tax revenue, the

Figure 2 - PELL GRANTS

	Number of Recipients	Total Dollar Amount	Average Dollar Amount
State Universities and Colleges	15,571	\$15,396,742	\$ 989
Private and Independent Schools	2,923	\$ 3,747,647	\$1,282
Postsecondary Proprietary Schools	3,388	\$ 4,209,031	\$1,242

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Federal Government would receive an additional \$2,580,333 ($\$30,879,800 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1. The cumulative individual income tax revenue from these individuals' continued income earnings would be \$12,901,665 in Year 5.

In proprietary schools, 3,388 students received Pell Grants from the Federal Government.²⁵ The total dollar amount of these grants was \$4,209,031 while the average dollar amount for each grant was \$1,242.²⁶ Based on the additional amount of personal income each student would earn after completing two years or less of education, these 3,388 students would cumulatively earn an additional \$7,870,324 ($\$2,323 \times 3,388$) in personal income in Year 1. However, this amount is increased to \$13,143,441 ($\$7,870,324 \times 1.67$) after the 1.67 multiplier is applied. Concerning individual income tax revenue, the Federal Government would receive an additional \$1,098,229 ($\$13,143,441 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1. For Year 5, the cumulative individual income tax revenue from these individuals' continued income earnings would be \$5,491,145.

Payback Periods. As has been shown, 15,571 students attending state universities and colleges received Pell Grants for a total dollar amount of \$15,396,742. In order to calculate the payback period, it was assumed that \$15,396,742 was spent each year on these 15,571 students for four years. That is, \$15,396,742 per year was spent on 15,571 students beginning their freshman year and continuing through their senior year. If these 15,571 students were to enter the labor force immediately after they graduated, in Year 1, they would generate \$13,745,536 in individual income tax revenue for the Federal Government their first year. Thus, the payback period for these 15,571 students would be 8.4805, or 8.48 years.

For four-year private and independent colleges, 2,923 students received Pell Grants for a total dollar amount of \$3,747,647. Based on the previously mentioned assumption, \$3,747,647 per year was spent on 2,923 students their freshman year through their senior year. In Year 1, if these 2,923 students became employed, they would generate \$2,580,333 in individual income tax revenue for the Federal Government. Based on these calculations, the payback period for these 2,923 students would be 9.8095, or 9.81 years.

In proprietary schools, 3,388 students received Pell Grants for a total dollar amount of \$4,209,031. It was then assumed that \$4,209,031 was spent each year on these 3,388 students for a maximum of two years. That is, \$4,209,031 per year was spent on 3,388 students beginning their first year and continuing through their second year. In Year 1, if these 3,388 students were to enter the labor force, they would generate \$1,098,229 in individual income tax revenue for the Federal Government. Thus, the payback period for these 3,388 students would be 9.6659, or 9.67 years. Table 2 provides summary information

concerning Pell Grants in relation to payback periods.

Table 2
PELL GRANTS

Type of Institution	No. of Years Grants Were Received	Education Level Obtained	Payback Period
State Universities and Colleges	4	4 yr. degree	8.48 years
Private and Independent Colleges	4	4 yr. degree	9.81 years
Postsecondary Proprietary Schools	2	2 yr. degree	9.67 years

Supplemental Education Opportunity Grant (SEOG)

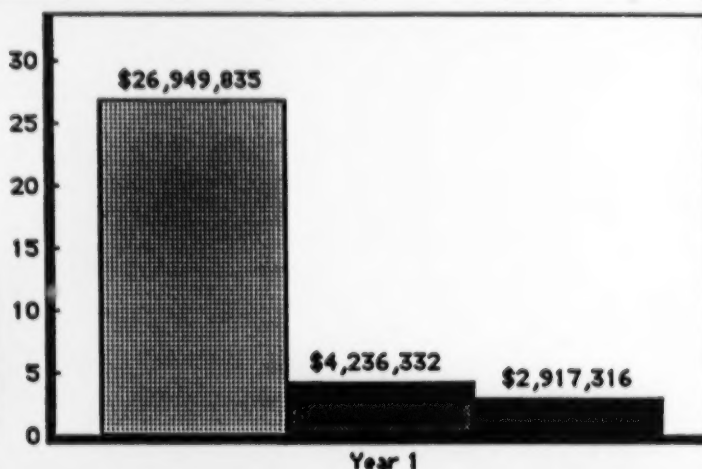
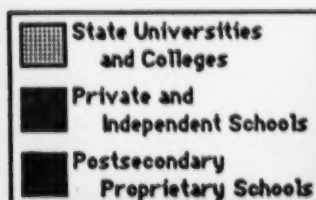
Individual Income Tax Revenue From Increased Individual Incomes. Figure 3 gives information for students who received SEOG's and attended state universities and colleges, private and independent colleges, and proprietary schools in Arkansas during the fiscal 1983-84 school year. During that year, 2,551 students attending state universities and colleges received SEOG's from the Federal Government.²⁷ The total dollar amount of these grants was \$1,581,069 while the average dollar amount for each grant was \$620.²⁸ Based on the additional amount of personal income each student would earn after completing a four-year education, these 2,551 students would collectively earn an additional \$16,137,626 ($\$6,326 \times 2,551$) in personal income in Year 1. However, this amount is increased to \$26,949,835 ($\$16,137,626 \times 1.67$) after the 1.67 multiplier is applied. In regard to individual income tax revenue, the Federal Government would receive an additional \$2,251,942 ($\$26,949,835 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1. As with the Pell Grant calculations, the cumulative individual income tax revenue is an additive progression. Thus, the value in Year 5 would be \$11,259,710.

In four-year private and independent colleges, 401 students received SEOG's from the Federal Government.²⁹ The total dollar amount of these grants was \$248,933 while the average dollar amount for each grant was \$621.³⁰ Based on the additional amount of personal income each student would earn after completing a four-year education, these 401

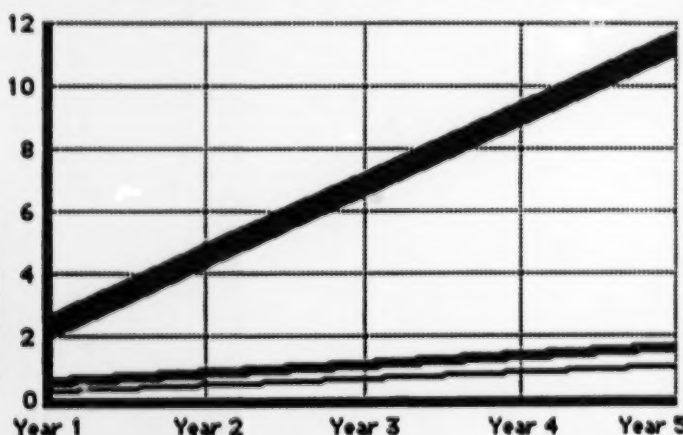
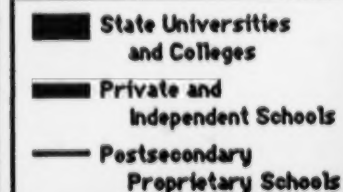
Figure 3 - SEOG's

	Number of Recipients	Total Dollar Amount	Average Dollar Amount
State Universities and Colleges	2,551	\$1,581,069	\$620
Private and Independent Schools	401	\$ 248,933	\$621
Postsecondary Proprietary Schools	752	\$ 232,514	\$309

Increased Individual Incomes for Year 1
(in millions of dollars)



Increased Individual Income Tax Revenue
(in millions of dollars)



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students would cumulatively earn an additional \$2,536,726 ($\$6,326 \times 401$) in personal income in Year 1. After the 1.67 multiplier is applied, however, this amount is increased to \$4,236,332 ($\$2,536,726 \times 1.67$). Regarding individual income tax revenue, the Federal Government would receive an additional \$353,960 ($\$4,236,332 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1. For Year 5, the cumulative individual income tax revenue from these individuals' continued income earnings would be \$1,769,800.

In proprietary schools, 752 students received SEOG's from the Federal Government.³¹ The total dollar amount of these grants was \$232,514 while the average dollar amount for each grant was \$309.³² Based on the additional amount of personal income each student would earn after completing two years or less of education, these 752 students would cumulatively earn an additional \$1,746,896 ($\$2,323 \times 752$) in personal income in Year 1. However, this amount is increased to \$2,917,316 ($\$1,746,896 \times 1.67$) after the 1.67 multiplier is applied. Regarding individual income tax revenue, the Federal Government would receive an additional \$243,745 ($\$2,917,316 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1. The cumulative individual income tax revenue from these individuals' continued income earnings would be \$1,218,725 in Year 5.

Payback Periods. As has been shown, 2,551 students attending state universities and colleges received SEOG's for a total dollar amount of \$1,581,069. In order to calculate the payback period, it was assumed that \$1,581,069 was spent each year on these 2,551 students for four years. That is, \$1,581,069 per year was spent on 2,551 students beginning their freshman year and continuing through their senior year. If these 2,551 students were to enter the labor force immediately after they graduated, in Year 1, they would generate \$2,251,942 in individual income tax revenue for the Federal Government their first year. Thus, the payback period for these 2,551 students would be 6.8083, or 6.81 years.

In four-year private and independent colleges, 401 students received SEOG's for a total dollar amount of \$248,933. Based on the previously mentioned assumption, \$248,933 per year was spent on 401 students their freshman year through their senior year. In Year 1, if these 401 students became employed, they would generate \$353,960 in individual income tax revenue for the Federal Government. Based on these calculations, the payback period for these 401 students would be 6.8131, or 6.81 years.

In proprietary schools, 752 students received SEOG's for a total dollar amount of \$232,514. It was then assumed that \$232,514 per year was spent on 752 students beginning their first year and continuing through their second year. In Year 1, if these 752 students were to enter the labor force, they would generate \$243,745 in individual income tax revenue for the Federal Government. Thus, the payback period for these 3,388 students

would be 3.9078, or 3.91 years. Table 3 provides summary information concerning SEOG's in relation to payback periods.

Table 3
SUPPLEMENTAL EDUCATION OPPORTUNITY GRANTS (SEOG)

Type of Institution	No. of Years Grants Were Received	Education Level Obtained	Payback Period
State Universities and Colleges	4	4 yr. degree	6.81 years
Private and Independent Colleges	4	4 yr. degree	6.81 years
Postsecondary Proprietary Schools	2	2 yr. degree	3.91 years

FEDERAL LOANS

Federal loans cited in the study were the National Direct Student Loan (NDSL) and the Guaranteed Student Loan (GSL). An NDSL is a low-interest loan to help students pay for their education after high school. These loans are for both undergraduate and graduate students and are made through a school's financial aid office.³³ NDSL's are ultimately insured by the Federal Government. Various schools participate in the NDSL Program. A GSL is a low-interest loan made to students by a lender such as a bank, credit union, or savings and loan association in order to help pay for education after high school. GSL's are insured by the guarantee agency in individual states and are reinsured by the Federal Government.³⁴ During the fiscal 1983-84 school year, the national net default rate for a GSL was 7.7 percent while Arkansas had only a 3.0 percent net default rate.³⁵ Unlike grants, loans must be paid back.

National Direct Student Loan (NDSL)

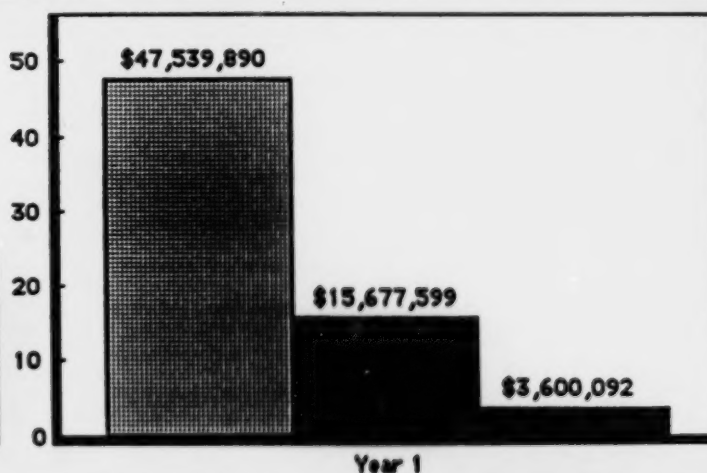
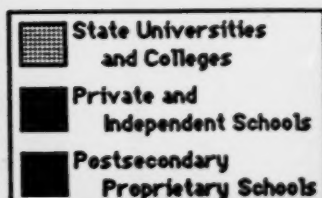
Individual Income Tax Revenue From Increased Individual Incomes. Regarding National Direct Student Loans, Figure 4 indicates information for students who received NDSL's and attended state universities and colleges, private and independent colleges, and proprietary schools in Arkansas during the fiscal 1983-84 school year. During that year, 4,500 students attending state universities and colleges received NDSL's.³⁶ The total dollar amount of these loans was \$3,593,084 while the average dollar amount for each loan was \$798.³⁷ Based on the additional amount of personal income each student would earn after completing a four-year education, these 4,500 students would collectively earn an additional \$28,467,000 ($\$6,326 \times 4,500$) in personal income in Year 1. However, this amount is increased to \$47,539,890 ($\$28,467,000 \times 1.67$) after the appropriate 1.67 multiplier is applied. In regard to individual income tax revenue, the Federal Government would receive an additional \$3,972,442 ($\$47,539,890 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1, based on the \$83.56 in individual income tax revenue the Federal Government received for every \$1,000 of personal income earned by Arkansans. Since the cumulative individual income tax revenue is an additive progression, the value in Year 5 would be \$19,862,210.

In four-year private and independent colleges, 1,484 students received NDSL's.³⁸ The total dollar amount of these loans was \$1,370,855 while the average dollar amount for each loan was \$924.³⁹ Based on the additional amount of personal income each student would earn after completing a four-year education, these 1,484 students would cumulatively earn

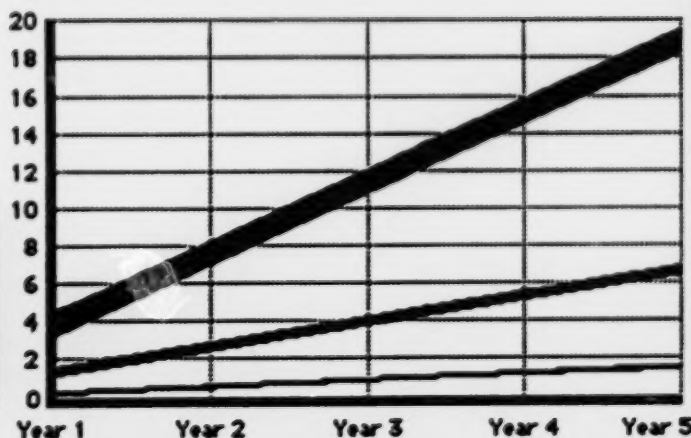
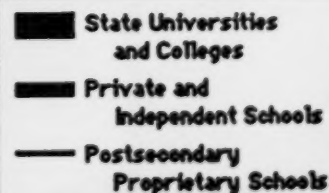
Figure 4 - NDSL's

	Number of Recipients	Total Dollar Amount	Average Dollar Amount
State Universities and Colleges	4,500	\$3,593,084	\$798
Private and Independent Schools	1,484	\$1,370,855	\$924
Postsecondary Proprietary Schools	928	\$ 345,354	\$372

Increased Individual Incomes for Year 1
(in millions of dollars)



Increased Individual Income Tax Revenue
(in millions of dollars)



an additional \$9,387,784 ($\$6,326 \times 1,484$) in personal income in Year 1. After the 1.67 multiplier is applied, however, this amount is increased to \$15,677,599 ($\$9,387,784 \times 1.67$). Concerning individual income tax revenue, the Federal Government would receive an additional \$1,310,054 ($\$15,677,599 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1. The cumulative individual income tax revenue from these individuals' continued income earnings would be \$6,550,270.

In proprietary schools, 928 students received NDSL's.⁴⁰ The total dollar amount of these loans was \$345,354 while the average dollar amount for each loan was \$372.⁴¹ Based on the additional amount of personal income each student would earn after completing two years or less of education, these 928 students would in aggregate earn an additional \$2,155,744 ($\$2,323 \times 928$) in personal income in Year 1. However, this amount is increased to \$3,600,092 ($\$2,155,744 \times 1.67$) after the 1.67 multiplier is applied. Regarding individual income tax revenue, the Federal Government would receive an additional \$300,816 ($\$3,600,092 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1. For Year 5, the cumulative individual income tax revenue from these individuals' continued income earnings would be \$1,504,080.

Payback Periods. As has been shown, 4,500 students attending state universities and colleges received NDSL's for an average dollar amount of \$798 per loan. In order to calculate the payback period, it was assumed that \$798 was spent each year on one student for four years and then the student defaulted on the loan. That is, \$798 per year was spent on one student beginning his or her freshman year and continuing through his or her senior year. Then, he or she defaulted on the loan and the Federal Government reimbursed the lending institution or agency after unsuccessful attempts to collect the amount owed on the loan. If this student entered the labor force immediately after he or she graduated, in Year 1, he or she would generate an average \$883 ($3,972,442 \div 4,500$) in individual income tax revenue for the Federal Government in this first year. Thus, the payback period for this student would be 7.6149, or 7.61 years.

In four-year private and independent colleges, 1,484 students received NDSL's for an average dollar amount of \$924 per loan. Based on the previously mentioned assumption, \$924 per year was spent on one student his or her freshman year through his or her senior year. Then, he or she defaulted on the loan and the Federal Government reimbursed the lending institution or agency after unsuccessful attempts to collect the amount owed on the loan. In Year 1, if this student became employed, he or she would generate an average \$883 ($1,310,054 \div 1,484$) in individual income tax revenue for the Federal Government. Based on these calculations, the payback period for this student would be 8.185, or 8.19 years.

In proprietary schools, 928 students received NDSL's for an average dollar amount of \$372. It was then assumed that \$372 was spent each year on one student for a maximum of two years. That is, \$372 per year was spent on one student beginning his or her first year and continuing through his or her second year. Then, he or she defaulted on the loan and the Federal Government reimbursed the lending agency after unsuccessful attempts to collect the amount owed on the loan. In Year 1, if this student entered the labor force, he or she would generate \$324 ($\$300,816 \div 928$) in individual income tax revenue for the Federal Government. Thus, the payback period for this student would be 4.2962, or 4.30 years. Table 4 provides summary information concerning NDSL's in relation to payback periods.

Table 4
NATIONAL DIRECT STUDENT LOANS (NDSL)

Type of Institution	No. of Years Grants Were Received	Education Level Obtained	Payback Period
State Universities and Colleges	4	4 yr. degree	7.61 years
Private and Independent Colleges	4	4 yr. degree	8.19 years
Postsecondary Proprietary Schools	2	2 yr. degree	4.30 years

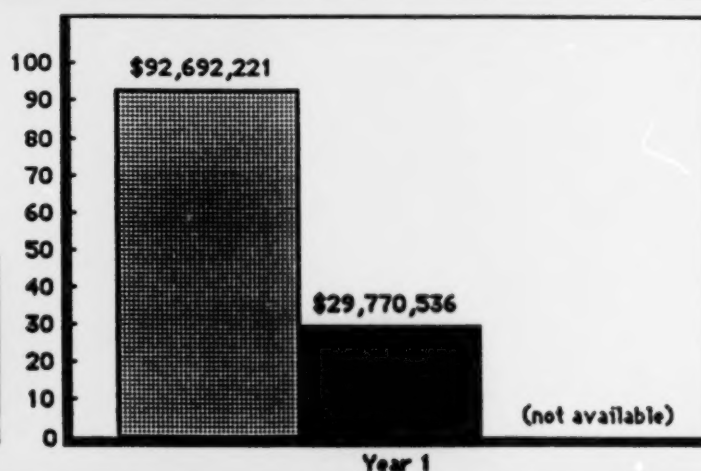
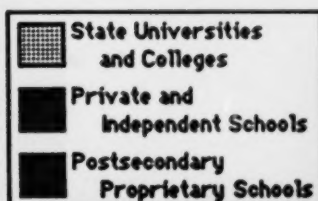
Guaranteed Student Loan (GSL)

Individual Income Tax Revenue From Increased Individual Incomes. Figure 5 indicates information for students who received GSL's and attended state universities and colleges, private and independent colleges, and proprietary schools in Arkansas during the fiscal 1983-84 school year. During that year, 8,774 students attending state universities and colleges received GSL's from the Federal Government.⁴² The total dollar amount of these loans was \$16,418,302 while the average dollar amount for each loan was \$1,871.⁴³ Based on the additional amount of personal income each student would earn after completing a four-year education, these 8,774 students would collectively earn an additional \$55,504,324 ($\$6,326 \times 8,774$) in personal income in Year 1. However, this amount is increased to

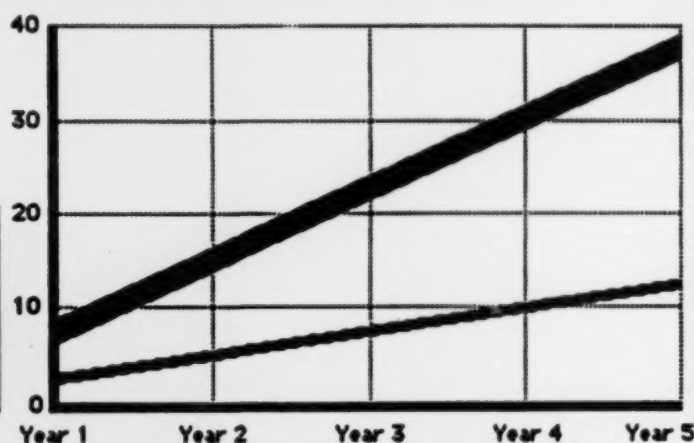
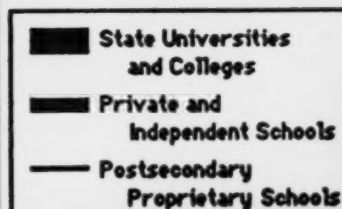
Figure 5 - GSL's

	Number of Recipients	Total Dollar Amount	Average Dollar Amount
State Universities and Colleges	8,774	\$16,418,302	\$1,871
Private and Independent Schools	2,818	\$ 6,058,439	\$2,150
Postsecondary Proprietary Schools	not available	not available	not available

Increased Individual Incomes for Year 1
(in millions of dollars)



Increased Individual Income Tax Revenue
(in millions of dollars)



\$92,692,221 ($\$55,504,324 \times 1.67$) after the 1.67 multiplier is applied. In regard to individual income tax revenue, the Federal Government would receive an additional \$7,745,344 ($\$92,692,221 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1. As with the NDSL, the cumulative individual income tax revenue is an additive progression. Thus, the value in Year 5 would be \$38,726,720.

For four-year private and independent colleges, 2,818 students received GSL's from the Federal Government.⁴⁴ The total dollar amount of these loans was \$6,058,439 while the average dollar amount for each loan was \$2,150.⁴⁵ Based on the additional amount of personal income each student would earn after completing a four-year education, these 2,818 students would cumulatively earn an additional \$17,826,668 ($\$6,326 \times 2,818$) in personal income in Year 1. After the 1.67 multiplier is applied, however, this amount is increased to \$29,770,536 ($\$17,826,668 \times 1.67$). Concerning individual income tax revenue, the Federal Government would receive an additional \$2,487,665 ($\$29,770,536 \div \$1,000 \times \$83.56$) in individual income taxes in Year 1. For Year 5, the cumulative individual income tax revenue from these individuals' continued income earnings would be \$12,438,325.

Information concerning GSL's for students in proprietary schools in 1983-84 was not available from those proprietary schools accredited by AICS, NATTS, and NACCAS.

Payback Periods. As has been shown, 8,774 students attending state universities and colleges received GSL's for an average dollar amount of \$1,871 per loan. In order to calculate the payback period, it was assumed that \$1,871 was spent each year on one student for four years and then the student defaulted on the loan and the Federal Government reimbursed the lending institution or agency after unsuccessful attempts to collect the amount owed on the loan. That is, \$1,871 per year was spent on one student beginning his or her freshman year and continuing through his or her senior year. If this student entered the labor force immediately after he or she graduated (Year 1), he or she would generate an average \$883 ($\$7,745,344 \div 8,774$) in individual income tax revenue for the Federal Government in this first year. Thus, the payback period for this student would be 12.4757, or 12.48 years.

In four-year private and independent colleges, 2,818 students received GSL's for an average dollar amount of \$2,150 per loan. Based on the previously mentioned assumption, \$2,150 per year was spent on one student his or her freshman year through his or her senior year. Then, he or she defaulted on the loan and the Federal Government reimbursed the lending institution or agency after unsuccessful attempts to collect the amount owned on the loan. In Year 1, if this student became employed, he or she would generate an average \$883 ($\$2,487,665 \div 2,818$) in individual income tax revenue for the Federal Government.

Based on these calculations, the payback period for this student would be 13.7395, or 13.74 years. Table 5 provides summary information concerning GSL's in relation to payback periods.

Table 5
GUARANTEED STUDENT LOANS (GSL)

Type of Institution	No. of Years Grants Were Received	Education Level Obtained	Payback Period
State Universities and Colleges	4	4 yr. degree	12.48 years
Private and Independent Colleges	4	4 yr. degree	13.74 years
Postsecondary Proprietary Schools	not available	not available	not available

CONCLUSIONS

The results of this research study indicate that student financial aid for postsecondary education in Arkansas has significant, positive effects on the state's tax revenue and the Federal Government's individual income tax revenue. The results also indicate a considerable difference in personal incomes between individuals with different levels of postsecondary education and individuals who completed only high school. Furthermore, the payback periods for selected student financial aid instruments were notably short, especially when the long-term ramifications of a higher education are considered.

State grants as a category had the shortest payback periods among all the student financial aid instruments examined. The payback periods for state grants provided to Arkansans in 1984 ranged from 3.44 to 5.03 years, depending on the type of institution. Collectively, students who graduated with the aid of state grants from the three types of institutions discussed would increase their personal income by \$104,765,901 while contributing \$8,147,651 in increased tax revenue to the State of Arkansas in Year 1.

Concerning grants from the Federal Government, the payback periods for Pell Grants ranged from 8.48 to 9.81 years, depending on the type of institution. For the fiscal 1983-84 school year, the Pell Grant program provided the overall largest number of student financial aid instruments to students in Arkansas. Compared to other grants or loans, Pell Grants also showed the largest amount of increased personal incomes with \$208,521,825. Furthermore, students who graduated from one of the three types of institutions examined would cumulatively supply \$17,424,098 in increased individual income tax revenue to the Federal Government in Year 1, which was also the largest amount compared to other grants or loans.

As a category, the Supplemental Education Opportunity Grant (SEOG) showed shorter payback periods than the Pell Grant. Depending on the type of institution, the payback periods for SEOG's ranged from 3.91 to 6.81 years. Individuals who graduated from all three types of institutions would cumulatively increase their personal incomes by \$34,103,483 while providing \$2,849,647 in increased individual income tax revenue to the Federal Government in Year 1. Undoubtedly, both the Pell Grants and the SEOG's would contribute a substantial amount of increased individual income tax revenue to the Federal Government.

Although the payback period for loans were based on the assumption that a very small number of loans are defaulted on, for example the GSL, their significance is relevant nonetheless since the Federal Government is the ultimate insurer. Unlike grants, loans must

be paid back. If a National Direct Student Loan (NDSL) were defaulted on, the payback periods would range from 4.30 to 8.19 years, depending on the type of institution. Collectively, students who received NDSL's and graduated from one of the three types of institutions observed would increase their personal incomes by \$66,817,581 while contributing \$5,583,312 in increased individual income tax revenue to the Federal Government in Year 1.

During the fiscal 1983-84 school year, the national net default rate for GSL's was 7.7 percent while Arkansas had only a 3.0 percent net default rate. However, for this small percentage of Guaranteed Student Loans (GSL) that was defaulted on in Arkansas, the payback period would range from 12.48 to 13.74 years, although data for proprietary schools were not available. As a category, GSL's showed the second largest amount of increased personal incomes for students who received GSL's during the observed time period with \$122,462,757. Also, GSL's claimed the second largest amount of increased individual income tax revenue with \$10,233,009, which would be provided to the Federal Government in Year 1.

The higher education made possible for Arkansans by student financial aid has clear and obvious benefits. For state and national government, the increased tax revenue generated by the higher education of individual citizens more than compensates for the amounts expended for student financial aid; that is, the end of the payback period signals the point at which the amount spent (original investment) has been recovered, but the increased tax revenue continues throughout these citizens' working lives. For the individuals whose increased earnings, made possible by student financial aid, have improved both the tax revenue outlook and their own quality of life, the benefits may well extend over a lifetime.

NOTES

¹ Center for Research and Public Policy, Division of Business Studies, Arkansas Postsecondary Proprietary Education: An Economic Impact Report, (Little Rock, Arkansas: University of Arkansas at Little Rock, January 27, 1986), p. 2.

² Ibid.

³ U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, Personal Tax and Nontax Payments Table Including Disposable Personal Income for Arkansas, (Washington, D.C.: U.S. GPO, August 1985), p. 1.

⁴ State of Arkansas, Department of Finance and Administration, Revenue Division, Statement of Gross Tax Collection, (Little Rock, Arkansas: Department of Finance and Administration, 1984), p. 1.

⁵ Calculated by University of Arkansas at Little Rock, Center for Research and Public Policy, Division of Business Studies from data supplied by the U.S. Department of Commerce, Bureau of Economic Analysis, March 1986.

⁶ Regional Economic Information System, p. 1.

⁷ Calculated by University of Arkansas at Little Rock, Center for Research and Public Policy, Division of Business Studies from data supplied by the U.S. Department of Commerce, Bureau of Economic Analysis, March 1986.

⁸ U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Characteristics of the Population, vol. 1, Detailed Population Characteristics, pt. 5, Arkansas, (Washington, D.C.: U.S. GPO, November 1983), pp. 438-441.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Eugene F. Brigham, Financial Management Theory and Practice, Fourth Edition, (Chicago: The Dryden Press, 1985), p. 314.

¹² State of Arkansas, Department of Higher Education, Department of Financial Aid, Arkansas State Scholarship Program, Statistical Report By Institution, (Little Rock, Arkansas: Department of Higher Education, 1983-84), p. 1.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ U.S. Department of Education, Office of Postsecondary Education, The Student Guide, Five Federal Financial Aid Programs '85-'86, (Washington, D.C.: U.S. GPO, 1984), p. 14.

¹⁹ Ibid.

²⁰ Ibid., p. 17.

²¹ U.S. Department of Education, Regional Office VI, Office of Student Financial Assistance, Rm. 2150, 1983-84 Pell Grant Program, Institutional Agreement and Authorization Report for Arkansas, June 5, 1985, pp. 39-45.

²² Ibid.

²³ Ibid.

²⁴ Ibid.

²⁵ Letter received from Sue Berke King, Vice President of Administration and Finance, Association of Independent Colleges and Schools, May 12, 1986.

²⁶ Ibid.

²⁷ U.S. Department of Education, Regional Office VI, Office of Student Financial Assistance, Rm. 2150, Congressional Notification Report for Arkansas, Report No. 81-1, June 3, 1984, pp. 16-19.

²⁸ Ibid.

²⁹ Ibid.

³⁰ Ibid.

³¹ Letter received from Sue Berke King, May 12, 1986.

³² Ibid.

³³ The Student Guide, p. 19.

³⁴ Ibid., p. 23.

³⁵ Telephone interview with Jim Lubell, U.S. Department of Education, Division of Policy and Program Development, Guaranteed Student Loan Branch, 2 April 1986.

³⁶ Letter received from Paul Z. Hill, Jr., Chief of Analysis Section, U.S. Department of Education, Assistant Secretary for Postsecondary Education, Office of Student Financial Assistance, Campus and State Grant Branch, Division of Policy and Program Development, OSFA. Data extracted from Campus-Based Universe File - FY6, March 28, 1986.

³⁷ Ibid.

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Letter from Sue Berke King, May 12, 1986.

⁴¹ Ibid.

⁴² Telephone survey conducted by the University of Arkansas at Little Rock, Center for Research and Public Policy, Division of Business Studies, April 1986.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid.

BIBLIOGRAPHY

Brigham, Eugene F. Financial Management Theory and Practice. 4th ed. Chicago: The Dryden Press, 1985.

Center for Research and Public Policy. Division of Business Studies. Arkansas Postsecondary Proprietary Education: An Economic Impact Report. Little Rock, Arkansas: University of Arkansas at Little Rock. 27 January 1986.

Hill, Paul Z., Jr. Letter to author. 25 March 1986.

King, Sue Berke. Letter to author. 12 May 1986.

State of Arkansas Department of Education Division of Vocational And Technical Education. Arkansas Department of Education Division of General Education. Arkansas Department of Higher Education. Postsecondary Educational Opportunities in Arkansas Directory. 1983-85 Edition. Little Rock, Arkansas: Arkansas Department of Higher Education, February 1983.

State of Arkansas Department of Finance and Administration. Revenue Division. Statement of Gross Tax Collection. Little Rock, Arkansas: Department of Finance and Administration.

State of Arkansas Department of Higher Education. Department of Financial Aid. Arkansas State Scholarship Program. Statistical Report By Institution. Little Rock, Arkansas: Department of Higher Education, 1983-84.

Lubell, Jim. Telephone interview. 2 April 1986.

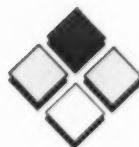
U.S. Department of Commerce. Bureau of Economic Analysis. Regional Economic Information System. Personal Tax and Nontax Payments Table Including Disposable Personal Income for Arkansas. Washington, D.C.: U.S. Government Printing Office, August 1985.

U.S. Department of Commerce. Bureau of the Census. 1980 Census of Population. Characteristics of the Population. Vol. 1, Detailed Population Characteristics. part 5. Arkansas. Washington, D.C.: U.S. Government Printing Office, November 1983.

U.S. Department of Commerce. Bureau of the Census. Government Finances. Governmental Finances in 1983-84. Washington, D.C.: U.S. Government Printing Office, October 1985.

- U.S. Department of Commerce. Bureau of the Census. Government Finances. State Government Finances in 1984. Washington, D.C.: U.S. Government Printing Office, October 1985.
- U.S. Department of Commerce. Bureau of the Census. Statistical Abstract of the United States 1985. 105th ed. Washington, D.C.: U.S. Government Printing Office, December 1984.
- U.S. Department of Commerce. Bureau of the Census. Statistical Abstract of the United States 1986. 106th ed. Washington, D.C.: U.S. Government Printing Office, December 1985.
- U.S. Department of Education. Office of Postsecondary Education. The Student Guide: Five Federal Financial Aid Programs '85-'86. Washington, D.C.: U.S. Government Printing Office, 1984.
- U.S. Department of Education. Regional Office VI. Office of Student Financial Assistance. Room 2150. Congressional Notification Report. Report No. 84-1, Arkansas. 3 June 1984.
- U.S. Department of Education. Regional Office VI. Office of Student Financial Assistance. Room 2150. 1983-84 Pell Grant Program. Institutional Agreement and Authorization Report. 5 June 1985.
- U.S. Department of the Treasury. Internal Revenue Service. Statistics of Income Bulletin. Vol. 5, no. 1. Washington, D.C.: U.S. Government Printing Office, Summer 1985.

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